

REMARKS

In the Office Action mailed on August 23, 2006, claims 13-16 are objected to because of informalities. Claims 13-16 have been withdrawn, and therefore the objection to claims 13-16 is moot. Applicant will amend the claims if and when the claims are rejoined in the application.

Claim 8 is objected to because of an informality. Applicant has amended the claim to more clearly indicate that the pair of rows of vias having ground vias "does not receive leads of a component." Support for the amendment may be found, for example, in paragraph [0023] which discloses vias which are large enough to receive leads of a component, as well as smaller vias. Applicant respectfully submits that it is clear from the specification that smaller vias do not receive leads of a component. Applicant submits that the objection to claim 8 has been overcome in view of the amendment, and respectfully requests reconsideration of the claim.

The specification is objected to because of an informality in the heading related to the detailed description. Applicant submits that the informality has been overcome in view of the change of the name of the heading from "DETAILED DESCRIPTION OF THE DRAWINGS" to "DETAILED DESCRIPTION OF THE INVENTION."

Claims 1, 3, 4 and 6 are rejected under 35 USC §103(a) as being unpatentable over Payne et al. (U.S. Patent Publication 2004/0264153, "Payne") in view of Patriche (U.S. Patent Number 6,608,762). Claims 7, 8 and 27-29 are rejected under 35 USC §103(a) as being unpatentable over Payne in view of Patriche and further in view of Goergen (U.S. Patent 6,822,876). Claims 5, 9 and 10 are rejected under 35 USC §103(a) as being unpatentable over Payne in view of Patriche and further in view of Goergen and Cartier et al. (U.S. Patent 6,639,154, "Cartier").

Response to Rejections under 35 USC §103

In response to the rejection of claims 1, 3, 4 and 6 as being unpatentable over Payne in view of Patriche, Applicant has amended claim 1 to indicate that the vias of the second row of vias are aligned in columns with vias of the first row of vias, and that vias of the plurality of rows of vias between the first row of vias and the second row of vias are aligned in columns with vias of the first row of vias and vias of the second row

of vias. Applicant respectfully submits that neither Payne nor Patriche discloses or suggests the plurality of rows of vias being coupled to a ground plane where the vias of the plurality of rows of vias are aligned in columns with vias of the first row of vias and vias of the second row of vias.

Payne is directed to a printed circuit board having a surface which provides a mating interface for signal and ground conductors. As shown in Fig. 14 and described in paragraph [0060] of Payne, signal conductor surface mounting pads 52 and ground conductor surface mounting pads 53 are provided. The circles 52a and 53a are shown to indicate where conductive vias are located underneath the surface mounting pads. In addition to failing to show vias which receive leads of components attached to the printed circuit board, Payne also fails to disclose or suggest the plurality of rows of vias being coupled to a ground plane, where the vias of the plurality of rows of vias are aligned in columns with signal vias of the first row of vias and the second row of vias. Applicant respectfully submits that claims 1 and 3-6 are allowable over the combination of Payne and Patriche in view of the amendment to independent claim 1.

In response to the rejection of claims 7, 8 and 27-29 as being unpatentable over Payne in view of Patriche and further in view of Goergen, Applicant has amended claim 7 to more clearly claim the printed circuit board by indicating which vias receive other leads of the component. While Applicant believes that it is implicit in the claim, Applicant has amended claim 7 to indicate that it is the ground vias of the row of vias between the pair of rows of vias which receive other leads of the component. Applicant respectfully submits that none of the references discloses or suggests the arrangement of vias as claimed, and that claim 7 clearly distinguishes over the combination of references.

It is suggested in the Office Action that while Payne fails to disclose a pair of rows of vias having ground vias, Goergen is cited for disclosing a pair of rows of vias having ground vias. In particular, it is suggested that elements 102, 104, 106 and 108 of Goergen discloses a pair of rows of ground vias. However, differential pairs refer to signal pairs, and the differential pairs 102, 104, 106, and 108 are clearly signal paths coupled to signal thru-holes. It is suggested in the Office Action that the differential pairs remain aligned with the rows of ground thru-holes 120a and 120b. However,

thru-holes 102a and 120b are signal thru-holes, while thru-holes 122a-122c are ground thru-holes. (Col. 8, lines 38-44). Therefore, the differential pairs are coupled to signal thru-holes, and the thru-holes coupled to the differential pairs of Goergen could not represent ground vias as claimed. Applicant notes that it is clear that neither reference discloses or suggests the three rows ground vias between the pair of row of signal vias. Applicant submits that claim 7 clearly distinguishes over the combination of references, and respectfully requests reconsideration of the rejection of claims 7, 8 and 27-29.

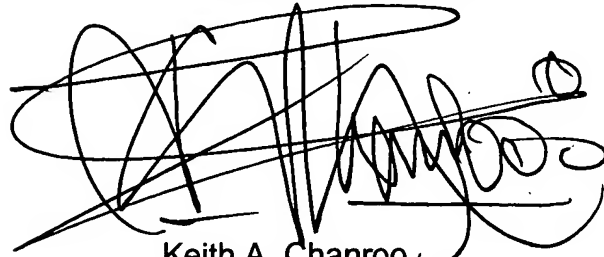
In response to the rejection of claims 5, 9 and 10 as being unpatentable over Payne in view of Patriche and further in view of Goergen and Cartier, Applicant respectfully submits that the claims are allowable over the combination of references in view of the amendments to the independent claims. While Cartier is cited for disclosing ground vias having different diameters, Cartier also fails to disclose the arrangement of rows of vias as claimed in independent claim 1. That is, Cartier also fails to disclose or suggest the plurality of rows of vias being coupled to a ground plane where the vias of the plurality of rows of vias are aligned in columns with vias of the first row of vias and vias of the second row of vias. Applicant further submits that claims 9 and 10 are allowable over the combination of references for the same reason that claim 7 as amended is believed allowable. Claim 9 is directed to a row of ground vias which have a smaller diameter than the row of signal vias, while claim 10 is directed to a pair of row of vias having ground vias providing return paths for signals in the signal vias. However, Cartier also fails to disclose or suggest the three rows of ground vias between the rows of signal vias as claimed in claim 7. Applicant respectfully submits claims 9 and 10 are allowable over the combination of references for the same reasons that independent claim 7 is believed allowable.

Conclusion

All claims should be now be in condition for allowance and a Notice of Allowance is respectfully requested.

If there are any questions, the Applicant's attorney, Keith A. Chanroo, can be reached at Tel: 408-879-7710.

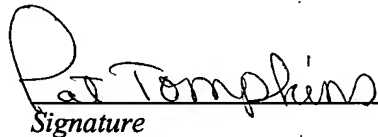
Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Keith A. Chanroo', with a large, stylized flourish extending from the end.

Keith A. Chanroo
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*I hereby certify that this correspondence is being deposited with the United States Postal Service as **first class mail** in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on October 5, 2006.*

Pat Tompkins
Name

A handwritten signature in black ink, appearing to read 'Pat Tompkins', with a large, stylized flourish extending from the end.
Signature